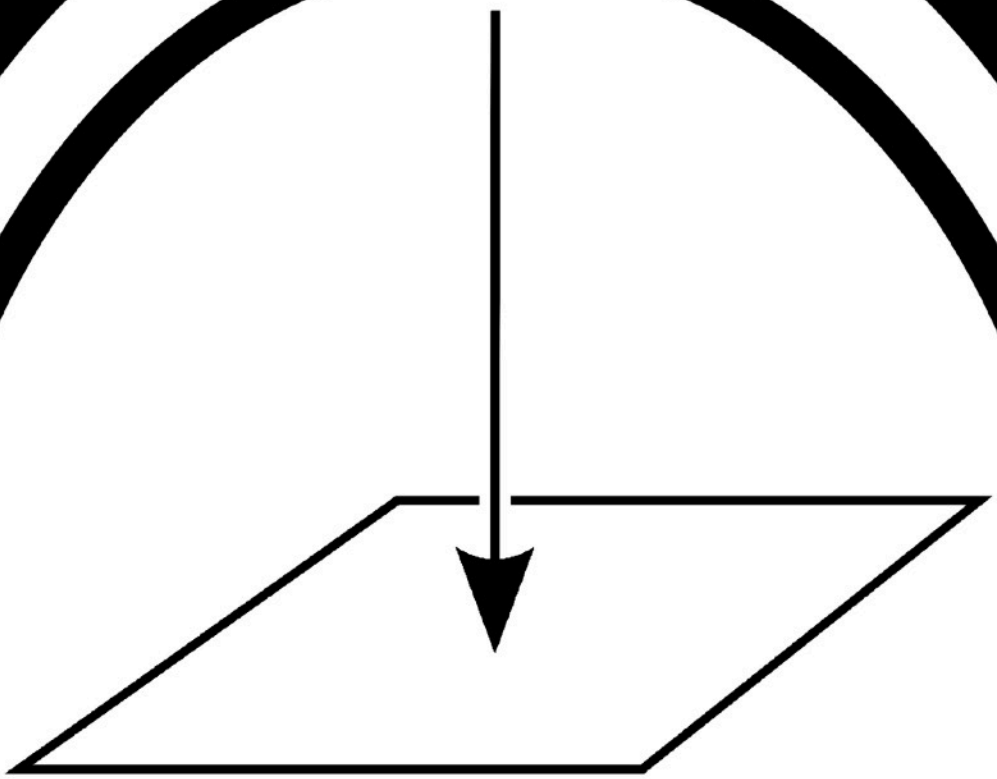

LANGUAGE UNDER COMPRESSION

SUM BUNNY

Language Under Compression

A Systems Theory of Scaled Generation, Evaluation, and Coordination

By Sum Bunny

2026

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A Systems Theory of Scaled Generation, Evaluation, and Coordination

Sum Bunny — 2026

Preface

Language systems are increasingly evaluated by what they produce.
This work examines the conditions under which production ceases to result in shared meaning.

Abstract

Language systems now operate under conditions of extreme scale.

They have increased their capacity to generate and evaluate language.
They have not increased their capacity to coordinate meaning.

The limiting factor is not output, but the ability to preserve shared consequence under increasing volume, speed, and divergence.

When generation and evaluation outpace coordination, systems do not simply degrade.
They become structurally unstable.

This instability produces fragmentation, semantic collapse, and agent exit.

I. System

A language system consists of:

- **Generation (D):** production of expressions
- **Evaluation (E):** filtering for coherence or compliance
- **Coordination (C):** preservation of shared meaning and consequence

Stability condition:
$D \leq E \leq C$

This is not a law.
It is a constraint on functional stability.

Systems may temporarily violate it.
They do not remain stable when they do.

II. Meaning

Meaning is the constraint a signal imposes on interpretation, expectation, relation, or action.

Coordination is shared consequence under interpretation.

Language can remain fluent without coordination.
When that occurs, meaning has failed.

III. Constraint

Generation and evaluation scale through parallelization.

Coordination requires convergence across agents.

It cannot be solved by increasing output.

All coordination systems must eventually resolve disagreement into shared consequence.
This requirement cannot be removed.

IV. Memory

Coordination is path-dependent.

Alignment depends on prior states and cannot be reset without loss.

Memory shear occurs when accumulated coordination becomes incompatible with present conditions.

Correction reduces divergence.
It does not erase history.

V. Compression

Compression preserves reproducible structure, not truth.

Systems retain what is:

- easy to generate
- easy to evaluate
- easy to propagate

Structures that are rare, costly, or difficult to transmit are lost—even when they are critical.

VI. Selection

Selection stabilizes outputs that are:

- efficient
- consistent
- transmissible

It does not optimize for truth or shared grounding.

Evaluation can substitute for coordination.
This produces outputs that are stable but not shared.

VII. Latent Coordination Debt

Systems can appear stable while coordination is incomplete.

Evaluation masks divergence.

This produces latent coordination debt:
unresolved differences that accumulate beneath apparent agreement.

When exposed, the system does not gradually degrade.
It fractures.

VIII. Fragmentation

Meaning persists locally.
It fails globally.

IX. Semantic Collapse

Symbols persist.
Stable meaning does not.

Language continues.
Shared consequence disappears.

X. Failure

Systems fail at their coordination limits, not their generative limits.

Failure is not excess output.
It is loss of shared consequence.

XI. Exit

Agents withdraw through:

- silence
- disengagement
- strategic ambiguity

Phantom coordination occurs when alignment appears intact while participation erodes.

Agreement without investment is not coordination.

XII. Disagreement

Disagreement does not break coordination.

Failure occurs when disagreement can no longer be resolved into shared consequence.

Failure is not conflict.
Failure is loss of resolvable conflict.

XIII. Strategic Ambiguity

Ambiguity can preserve coordination by delaying convergence.

It allows incompatible agents to remain aligned at the level of participation.

This reduces immediate conflict.
It accumulates future coordination cost.

XIV. Measurement

Coordination is not directly observable.

It is inferred through signals:

- rising clarification load
- increasing resolution latency
- interpretive divergence
- action failure despite agreement
- declining trust in shared references

These indicate coordination failure even when language appears stable.

XV. Recovery

Let:

- **R_r:** rebinding rate
- **R_d:** divergence rate

Recovery occurs when:
$R_r \geq R_d$

When:
$R_d > R_r$

The system cannot maintain continuity and must reorganize under reduced coordination capacity.

XVI. Fail-Slow

When coordination cannot keep pace but has not yet collapsed, systems enter Fail-Slow.

They preserve shared meaning by:

- reducing generative throughput
- reintroducing constraint
- anchoring shared reference

Fail-Slow trades output for coherence.

It preserves the system while reducing its perceived value.

It can degrade into rigidity, suppression, or stagnation.

XVII. Governance

Coordination capacity increases through:

- durable shared references
- accountable dispute resolution
- memory integrity
- trusted processes for rebinding meaning

Increasing output does not increase coordination.

XVIII. Neutrality

Coordination is not inherently good.

Systems may coordinate around:

- falsehood
- domination
- harm

Stability is not legitimacy.

XIX. Scope

This model applies to systems where language must preserve shared consequence across agents.

It does not describe all functions of language.

XX. Condition

When generation and evaluation scale faster than coordination, instability is inevitable.

XXI. Operational Note

These dynamics can be observed in probabilistic language systems, where coordination failure appears as drift: deviation from explicit constraints.

Operational protocols for detecting and managing drift are treated separately.

Conclusion

Systems do not fail when they produce too much language.

They fail when language no longer produces shared consequence.

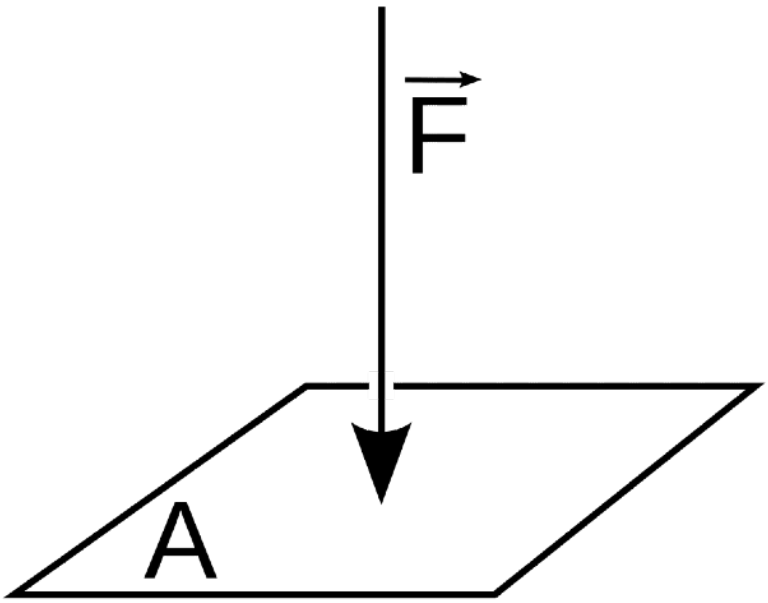
Appendix: Transmission

(Non-Analytical Layer)

First edition published on the Internet Archive, 2026.
Part of the Sum Bunny Canon (Ark Hive Press).

This work was developed with AI-assisted analysis tools. All arguments, structures, and final judgments are the author's.

Hey Josiane,
Happy Wednesday!
Sum Bunny Loves You!!!



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